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See table of contents

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Article abstract

Given that there exist many reasons why a firm should hedge its exposure to financial risks, this paper proposes a financial risk management policy for non-financial corporations. These corporations are mostly end-users of derivatives securities for hedging purposes, whereas financial institutions are also issuers and intermediaries. This is why we adapted generally accepted financial risk management principles, since they were originally designed for financial institutions. Our policy is derived from the one recently adopted by a large Canadian firm and its compliance to G30 recommendations has been acknowledged by international consultant firm. A rating agency also mentioned that the policy constitutes a positive element in a report issued a few months after it has been implemented.

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ABSTRACT

Given that there exist many reasons why a firm should hedge its exposure to financial risks, this paper proposes a financial risk management policy for non-financial corporations. These corporations are mostly end-users of derivatives securities for hedging purposes, whereas financial institutions are also issuers and intermediaries. This is why we adapted generally accepted financial risk management principles, since they were originally designed for financial institutions. Our policy is derived from the one recently adopted by a large Canadian firm and its compliance to G30 recommendations has been acknowledged by international consultant firm. A rating agency also mentioned that the policy constitutes a positive element in a report issued a few months after it has been implemented.

Keywords : Financial risks, financial risk management policy, group of 30, derivatives.

RÉSUMÉ

Il existe plusieurs raisons pour lesquelles une entreprise devrait se protéger contre les risques financiers. Cet article propose une politique de gestion des risques financiers destinée aux entreprises non financières. Ces dernières sont surtout des utilisateurs de produits dérivés, tandis que les institutions financières sont à la fois utilisateurs et intermédiaires. C'est pourquoi nous devons adopter les principes de gestion des risques conçus à l'origine pour des institutions financières. Notre politique provient de celle adoptée récemment par une grande entreprise canadienne et sa conformité aux recommandations du G30 a été reconnue par une société-conseil d'envergure internationale. Dans un rapport émis quelques mois après son entrée en vigueur, une agence d'évaluation de crédit mentionnait que cette politique représentait un élément des plus positifs.

Mots clés : *Risques financiers, politique de gestion des risques financiers, groupe des 30, produits dérivés.*

The authors :

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1. INTRODUCTION

Since the mid-70's, most financial markets show a volatility that is either higher or more variable than before. This phenomenon brought a new challenge to Treasury departments : financial risk management (FRM).

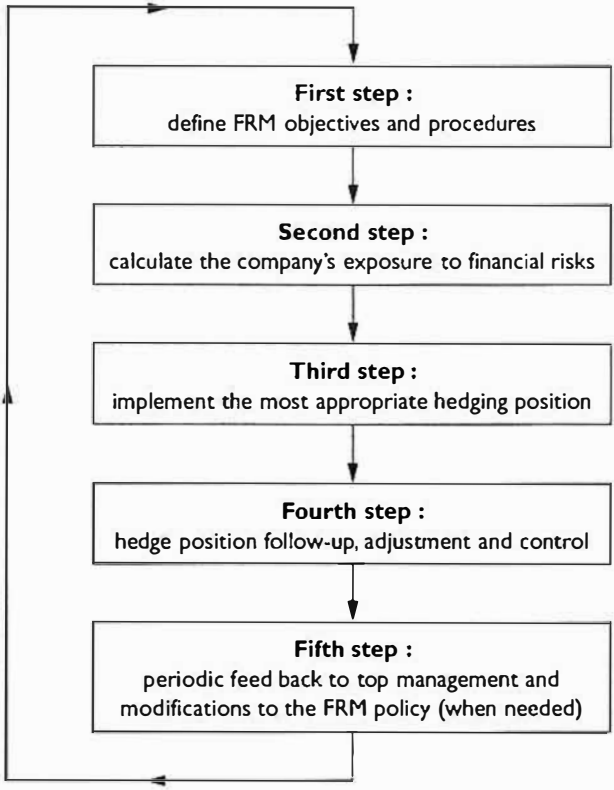
FRM is now a widely accepted financial practice aimed at selecting the nature of the risks, and the level of exposure a company is comfortable with. Since FRM affects the risk-return equilibrium of a company, it constitutes a very important component of its financial policy.

The financial problems many companies encountered because of poor uses of derivative instruments attracted much attention a few years ago (see the appendix). Since then, numerous organisations and consulting firms published documents outlining adequate FRM principles. The great majority of those documents constitute variations of the one issued by the so-called "Group of 30", which is mostly focused on financial institutions. These principles can be summarised as in Figure 1 (Group of thirty, 1993, Laroche and St-Cyr, 1996, Smith and Stulz, 1985, Warthon/Chase, 1995).

Even though good FRM principles are now well known and largely accepted, very little has been published on what constitutes a proper FRM policy. This article aims at filling this absence by presenting an example of what a FRM policy should contain for non-financial corporations which, unlike financial institutions, are mostly "pure" end-users that have no intermediary activities.

After reviewing in section 2 the reasons why a firm should hedge its exposure to financial risks, we divide the FRM policy into six sections, each of which roughly corresponding to one of the basic element of the generally accepted FRM principles outlined in Figure 1. Section 3 covers the objectives the company should pursue, and the corresponding admissible policies and strategies. Sections 4 and 5 describe the way Price and Cashflow risks exposure are to be measured, and how hedging positions will be determined. Those two types of financial risks are the most important a non-financial is usually exposed to, but their hedging must also take into account other types of financial risks, which are covered in Section 6. In order to be assured that hedging practices meet objectives, Section 7 contains strict rules on monitoring, performance evaluation and information diffusion. Section 8 addresses the question of responsibility and authority for implementing this policy. At last, we provide in Section 9 concluding remarks.

FIGURE 1
A SUMMARY ILLUSTRATION OF GENERALLY ACCEPTED FRM PRINCIPLES



2. WHY DO COMPANIES HEDGE THEIR FINANCIAL RISKS? A BRIEF REVIEW

The objectives and justification of financial risk management has been widely debated (see, among others, Myers (1977), DeMarzo and Duffie (1995), Stulz (1984 and 1996) and more recently Cliche (1999)). Reasons to hedge or not to hedge can be regrouped into seven arguments, each of which constitutes a sufficient condition to hedge:

- Hedging activities may generate tax gains.
- Hedging activities may reduce financial distress costs.

– Hedging activities may bring a better link between investment and financing decisions (mostly because they reduce the probability of being short of internally generated cash, that main source of financing for non-financial corporations).

– Hedging activities may reduce the cost of under-investment.

– Hedging activities at the corporate level may be a cheaper and more effective way to cope with risk aversion of most shareholders.

– Hedging activities may reduce agency costs.

– Hedging activities may contribute to better monitor corporate managers' performance.

■ 3. OBJECTIVES, POLICIES AND STRATEGIES

□ 3.1 General objective

The financial risk management policy (FRMP) pursues the following general objective : give shareholders the best possible risk-return trade-off. As an important component of the company's financial strategy, the FRMP must take into account other dimensions of company's strategies and policies, and includes a limit on the level of risks taken.

□ 3.2 Specific objectives

3.2.1 The company will use in a conservative way all available tools to achieve a mix of the two following objectives :

1. To minimise as well as possible the impact of financial markets volatility on company's cashflows.

2. To limit losses caused by unfavourable market moves, while being able to benefit from favourable ones.

3.2.2 A hedging decision will be considered to be conservative when :

1. The traders know well the tool(s) it requires and the market(s) on which it is (they are) traded.

2. The markets for those tools, may them be over the counter or structured exchange, are well established and well functioning.

3. The financial and accounting impacts of a wide variety of possible market states are known.

4. The hedging positions take into account all types of financial risks and accompanying non financial risks, as defined in Sections 5 and 6.

3.2.3 Given (1) current market conditions, (2) market movement and volatility forecasts, and (3) spreads between actual and budgeted results, these objectives may be pursued on a continuous basis, or for a given date or period.

3.2.4 Annual specific objectives must be set taking into account company's Supply and Debt policies. Annual hedging objectives may be revised by a Financial risk management Committee (defined in section 3.5).

☐ 3.3 General policies

The achievement of financial risk management objective will obey the following policies :

1. Hedging positions must be taken or cancelled with respect to the general and specific objectives defined above.

2. The FRMP will be under the immediate responsibility of the Financial Risk Management Committee (FRMC).

3. The motive underlying each transaction must be set clearly, must be authorised and must be filed for possible future control.

4. All transactions must be authorised by the Chief trader and /or the Treasurer (with the exception of special cases defined in Section 5. In their absence, substitutes must be authorised by the Financial risk management committee (defined in Section 3.5).

5. Hedging positions may be taken on current and/or future spot positions.

6. Speculative positions are strictly prohibited.

☐ 3.4 Admissible hedging tools and strategies

3.4.1 In order to achieve the objectives with maximum effectiveness and minimum constraints, company's hedging managers are allowed to consider the widest possible range of derivative and non-derivative hedging tools. More precisely, the following operations are admissible :

1. Buy or sell forward contracts, futures contracts, swaps, options, caps, floors, collars, or any other derivative security.

2. Issue or buy back debt securities with derivative components.

3.4.2 Hedging positions can be held until their maturity or be reviewed before.

3.4.3 The list of admissible hedging tools must be updated yearly to include new tools available. However, the FRMC can give instructions to temporarily prohibit the use of a particular tool.

☐ 3.5 The Financial risk management committee

3.5.1 The hedging activities are under the immediate responsibility of the Financial risk management committee (FRMC), who must report to the Board of directors (see Section 7 for additional instructions on responsibility and authority for implementing this policy).

3.5.2 The FRMC is comprised of no less than six members, or their delegates. The FRMC must include:

– The Chief financial officer, who acts as the chairman of the committee.

– The Treasurer, who acts as the vice-chairman of the committee.

– The Vice-president Finance.

– The Vice-president Operations.

– The General Counsel.

– A member who is not an employee of the company, and who is recognised knowledgeable in the field of financial risk management.

3.5.3 The FRMC must accomplish the following specific duties and mandate:

– Set the specific objectives, strategy, parameters and levels of all hedging activities.

– Ensure that the hedging procedures meet the highest standards.

– Determine the target aggregate and individual exposures to financial risks.

– Determine transaction and position limits (see Section 5.4).

– Determine the contingency plan's safety level and the corresponding limit modifications (see Section 5.6).

– Determine the credit risk exposure limit (see Section 6.2) and the corresponding netting agreements standards and mark to market caps (see Section 6.4).

– When necessary, ensure that financial risk hedging activities are evaluated by Finance, Operating, Tax, Planning, Accounting and Legal departments.

– Establish the necessary control procedures and ensure the competency of the personnel and their training.

– Ensure proper reporting of hedging activities.

■ 4. FINANCIAL RISKS EXPOSURE MEASUREMENT

☐ **4.1** Exposure to Price and Cashflow risks by using state-of-the art techniques. The exposure must be estimated on a daily basis. The calculations must be fed with reliable market data and estimations of market values (for securities that are not exchange traded), volatility and correlations between risk factors. Parameters of the exposure measurement model must be reviewed at least every three months and updated when necessary.

☐ **4.2** Exposure to Price and Cashflow risks must be done on an aggregate basis (e.g. taking into account all spot and hedging positions), as well as on an individual basis (e.g. for each position) if needed.

☐ **4.3** Credit risk exposure of hedge positions must be calculated at least once a month[1], and take into account the three following elements:

– The market value estimations of the contract if positive for the company (zero otherwise).

– The probability of default of the counterparty.

– The proportion of the due amount that should be recovered if the counterparty defaults.

The probability of default estimation must be based on the average of at least two[2] credit ratings given by renowned rating agencies, and should rise with respect to the maturity of the contract.

The portion of due amount recoverable estimation must rely on judgement, higher portions being associated with better credit ratings. However, it should never exceed 50 % and should decrease with respect to the maturity of the contract.

☐ **4.4** For every derivative-based hedge position , traders must provide *Time to hedge* and *Time to close* estimations as guidelines for liquidity risk exposure. Estimations must be done at least once a week, or on a continuous basis when markets are considered to be volatile.

☐ **4.5** All risk exposure measurement must evolve with the best practices.

☐ **4.6** Exposure measures to financial risks are the immediate responsibility of the Chief trader. The Treasurer must monitor exposures and may give instructions to reduce some of them when they are considered too important.

■ 5. HEDGING PROCEDURE FOR PRICE AND CASHFLOW RISKS

☐ **5.1** The hedging decision consists in selecting the combination of the admissible tools listed in Section 3.4, that will allow the company to meet its hedging objectives. At any time, hedging positions can be adjusted to market movements.

☐ **5.2** Each transaction must be clearly justified and the justification must be filed for possible future examination.

☐ **5.3** Each transaction must be authorised by the Treasurer, except when conditions specified in Section 5.6 are met, in which case special authorisations procedures are defined. However, the authorisation structure must ensure a suitable decision slack for the traders.

☐ **5.4** The hedging positions are subject to the following types of limits:

– Amount and/or number of contracts per transaction.

– Amount and/or number of contracts for a position on a given type of derivative instrument.

– Amount or percentage of forecasted working capital of contracts maturing around a given date.

– Percentage of volume and/or open interest on a given market.

These amounts, number of contracts and percentages are set by the FRMC.

☐ **5.5** Any temporary limit digression must be well justified and be pre-authorised by the Treasurer and the FRMC if there is enough time to wait for its next meeting.

☐ **5.6** Based on stress testing of exposure and hedging positions, when extreme market conditions are met, company's position on that market must be brought down to a safety level, with no considerations of the limits set in Section 5.4. The safety position and the corresponding limit modifications are set in advance by the FRMC. Under these conditions, a contingency plan must be activated with no prior authorisation. In that case, traders are allowed to do any transaction that will bring company's position to the safety level.

☐ **5.7** Selecting hedging transactions and respecting limits are the immediate responsibility of the Chief trader. The limits are monitored by the Chief trader and the Treasurer at least on a weekly basis, or more frequently when needed.

■ 6. TAKING INTO ACCOUNT OTHER RISKS

☐ **6.1** The hedging decision regarding Price and Cashflow risks will take into account credit, liquidity, legal, operational and information system risks, all measured according to the highest standards, as well as all relevant costs.

☐ **6.2** Transactions of over-the-counter derivative instruments can be done only with counterparties having a senior long-term debt credit rating not less than A with Standard & Poor's, or the equiva-

lent rating awarded by other recognised rating agencies. If the counterparty is not located in a G7 country, an assessment of the country's political risk must be obtained and taken into account.

☐ **6.3** The exposure to credit risk must be spread among a number of admissible counterparties. FRMC must set a credit risk exposure limit (see Section 4.3 for further details on its measurement). Price and Cashflow risks hedging positions must always meet this credit risk exposure limit . Exceptions to exposure conditions defined in 6.2 must be well justified and subject of the prior approval of the Treasurer. The FRMC must be informed of such exceptions.

☐ **6.4** Price and Cashflow risks hedging positions must be flexible enough to be completely modifiable within a few days. The FRMC must set a liquidity risk exposure limit (see Section 4.4 for further details on its measurement). Price and Cashflow risks hedging positions must always meet this liquidity risk exposure limit.

☐ **6.5** In order to minimise credit risk exposure, the company should negotiate netting agreements and/or mark to market caps with its counterparties. The netting agreements standards and mark to market caps are determined by the FRMC.

☐ **6.6** Legal aspects of Price and Cashflow risks hedging positions must always be known. Over-the-counter contracts should meet the International Swap and Derivatives Association's (ISDA) standards as often as possible. Special attention should be given to netting agreements, mark to market caps, and contracts with non Canadian counterparties. Legal advises by external experts must be obtained on any uncertain issue.

☐ **6.7** Hedging, control and reporting activities must be carried by different employees in order to assure the highest standards of responsibility segregation. All those tasks must be done by competent employees. The FRMC must approve a training program set by the Treasurer for all employees involved in the financial risk hedging program. Also, the FRMC has the responsibility to implement a rigorous system of authority delegation when key employees are on leave.

☐ **6.8** The information system must provide the Treasurer, the traders and the employees in charge of control and reporting, with reliable, on-time market and accounting data. In absence of recent market data, reliable estimation of market prices must be done. The information system must be such that Price, Cashflow and Credit risks exposure can be calculated every day if needed. The information system must provide reports adapted to the different management instances who are responsible for the financial risk management program.

■ 7. MONITORING, PERFORMANCE EVALUATION AND INFORMATION DIFFUSION

☐ **7.1** The information system must produce the following reports, which may be completed by other reports needed by the Treasurer and the traders:

Content	Origin	Destination	Frequency
1. Value and nature of hedging positions, accumulated gains or losses on exposure and hedging positions, limit compliance, exposure to Market and Cashflow risks, and impact of large market movements on exposure and hedging positions	Chief trader	Treasurer	Weekly or daily when needed
2. Same as in 1., plus actual situation with respect to forecasts, plus exposure to Credit risk	Treasurer	FRMC	Monthly or weekly when needed
3. Same as in 2., plus overall performance evaluation and impact of hedging activities on key financial statistics	FRMC	Board of directors (Audit and finance committee)	Quarterly or monthly when needed

☐ **7.2** Performance evaluation of the financial risk hedging program should be based on the three following criteria:

– Achievement of objectives.

– Good justification of the differences between current positions and forecasted ones.

– Efficiency of operations needed to achieve objectives.

– Compliance of operations with policies, strategies and limits.

– Reports presented to the Audit and finance committee must explicitly answer the questions corresponding to each performance criteria.

☐ **7.3** If performance criteria are not met, the FRMC must review and eventually modify the objectives, policies, strategies, and admissible practices of the financial risk hedging program.

☐ **7.4** Information on hedging activities appearing in the financial statements and the accompanying notes should meet the highest standards of the industry.

☐ **7.5** The FRM policy and its implementation must be reviewed at least once a year by Internal Audit.

■ 8. RESPONSIBILITY AND AUTHORITY FOR IMPLEMENTATION

☐ **8.1** The Board of directors approves this policy and subsequent modifications to it.

☐ **8.2** The Chief financial officer has the responsibility and authority to implement this policy.

☐ **8.3** The FRMC and the Treasurer are responsible for the development, implementation and monitoring of supporting policies, procedures and activities.

☐ **8.4** All employees involved in financial risk hedging activities must also demonstrate commitment to this policy, in a manner consistent with company's policies, procedures and guidelines.

9. CONCLUDING REMARKS

This FRM policy is designed to provide what we thought to be the best compromise between details (or rigidity) and generalities. The result provides a good framework to FRM activities but still lets enough decision slack to the traders and middle managers. This compromise is obtained through the importance given to the FRMC, a solution many companies may not be comfortable with. Note that the existence and our proposed composition of the FRMC assures that top management will always be properly informed of the reasons, the nature, the importance and the risk of the company's FRM activities, thus avoiding a weakness encountered in most companies that suffered huge derivatives losses.

Our proposed FRMP also takes into account some more theoretical issues. First, even though it may be shown that it may be optimal for a company to simultaneously do hedging and speculation, prohibiting the latter has many advantages for companies whose basic activities are not founded on a competitive advantage in trading on financial markets. Second, even in the presence of position and transaction limits, prohibiting speculation diminishes the expected cost of the agency problem associated with the possibility that following an unfavourable market move, a trader has an incentive to add to a losing position in the hope of a market turnaround[3]. Third, by doing no speculation, the company lowers its exposure to what may be called "information asymmetry risk".

The implementation of such a policy is an important issue. First, it is highly advisable to explain it to that external and internal auditors before its proposal to the board of directors. Second, for companies not well familiar with financial risk management, it is highly recommended to initially set rather low trade and position limits and gradually raise them up to the desired level as the Treasury department gets more familiar with trading and managing hedging positions. It is also advisable to begin the hedging program by using simpler derivatives products and related decision tools (models). Subsequently, a well structured improvement program should bring hedging practices up to the highest industry standards. At last, much importance should be given to the integration of the FRM information (sub-)system to the more general treasury and accounting systems.

As stated before, the policy we present in this article does not fit every non-financial corporation – it must be adapted to the organisation's structure and other management policies. For example, smaller companies may not need a Financial risk management

committee; its functions may be properly handled by the executive committee. Other companies may allow their traders to use other derivative instruments, a greater number of admissible hedging positions, or settle more important transactions without permission.

Any organization involved in FRM activities – may them be temporary or continuous – should adopt a policy similar to the one we presented here if it wants to significantly lower the probability that its name be added to the list of appendix.

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Notes

1. For most non-financial companies, credit risk measurement and management is difficult. This is why we suggest to begin with a monthly calculation of credit risk exposure. Subsequently, as the company gets more familiar with this question, the calculation should be made at least every week.

2. One referee suggested at least three ratings. Since this is possible for many counterparties but not for eveyone, we prefer to require at least two.

3. The agency problem arises from the fact that the trader's cost of acting this way (i.e. lowering this year's bonus and raising the probability of being fired) is much less than that of the company.

APPENDIX
THE MAIN FINANCIAL SCANDALS INVOLVING DERIVATIVE INSTRUMENTS

Company	Date or period	Loss *(US $ millions)*
Barings Bank	February 1995	1,400
Orange County	December 1994	1,700
Glaxo	July 1994	180
Gibson Grating	Beginning of 1994	19.7
Sandoz	May 1994	78.5
Air Products & Chemicals	May 1994	60
Proctor & Gamble	April 1994	102
Kashima Oil	April 1994	1,500
Codelco	January 1994	207
Mettallgesellschaft	December 1993	1,300
Showa Shell Sekiyu	February 1993	1,400
Allied Lyons	March 1991	265
Hammirsmith & Fulham (U.K. municipal authorities)	From 1986 to 1988	900

Source: The Economist. February 10. 1996.